IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT	:	Thomas Richter		
SERIAL NO.	:	9/817,977	EXAMINER	: Tanmay S. Lele
FILED	:	March 27, 2001	ART UNIT	: 2684
FOR	:	NETWORK ELEMENT OF AN ANALOG, CELLULAR NETWORK, AND METHOD FOR SUCH A NETWORK ELEMENT		

APPEAL BRIEF TRANSMITTAL LETTER

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA. 22313-1450

Dear Sir:

Appellants respectfully submit three copies of a Brief For Appellants that includes an Appendix with the pending claims. The Appeal Brief is now due on September 20, 2004.

Appellants enclose a check in the amount of $330.00 covering the requisite Government Fee.

Should the Examiner deem that there are any issues which may be best resolved by telephone communication, kindly telephone Applicants undersigned representative at the number listed below.

Respectfully submitted,
Aaron Waxler
Registration No. 48,027

By: Steve Cha
Attorney for Applicant
Registration No. 44,069

Date: 09/20/04

Mail all correspondence to:
Aaron Waxler, Registration No. 48,027
US PHILIPS CORPORATION
P.O. Box 3001
Briarcliff Manor, NY 10510-8001
Phone: (914) 333-9608
Fax: (914) 332-0615

Certificate of Mailing Under 37 CFR 1.8

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to MAIL STOP APPEAL BRIEF-PATENTS, COMMISSIONER FOR PATENTS, P.O. BOX 1450, ALEXANDRIA, VA. 22313 on September 20, 2004.

David Rosenblum, Reg. No. 37,709
(Name of Registered Rep.)

David J. Rosenblum 9/20/04
(Signature and Date)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Before the Board of Patent Appeals and Interferences

In re the Application		
Inventor	:	Thomas Richter
Application No.	:	09/817,977
Filed	:	March 27, 2001
For	:	NETWORK ELEMENT OF AN ANALOG, CELLULAR NETWORK, AND METHOD FOR SUCH A NETWORK ELEMENT

APPEAL BRIEF

On Appeal from Group Art Unit 2684

Date: September 20, 2004

Aaron Waxler
Registration No. 48,027
By: Steve Cha
Attorney for Applicant
Registration No. 44,069

TABLE OF CONTENTS

I. REAL PARTY IN INTEREST

The real party in interest is the assignee of the present application, U.S. Philips Corporation, and not the party named in the above caption.

II. RELATED APPEALS AND INTERFERENCES

With regard to identifying by number and filing date all other appeals or interferences known to Appellant which will directly effect or be directly affected by or have a bearing on the Board's decision in this appeal, Appellant is not aware of any such appeals or interferences.

III. STATUS OF CLAIMS

Claims 1-6 have been presented for examination. All of these claims are pending, stand finally rejected, and form the subject matter of the present appeal.

IV. STATUS OF AMENDMENTS

Although a Request for Reconsideration was made after the Final Office Action filed April 20, 2004, no Amendment has been made after Final.

V. SUMMARY OF THE INVENTION

The present invention relates to making quicker synchronization between a wireless signal transmitter and a wireless signal transceiver. A mobile radio traveling in a cellular system, for instance, may need to receive a transmitted signal quickly, as when the mobile radio is moving from the coverage area of one base station to the

coverage area of another base station. In the latter event, the mobile radio preferably receives a transmitted message from a base station to trigger the mobile radio to change over to a communication channel of the new base station (page 1, lines 20-23). The process of changing over is called a handoff. Due to the interference characteristic of communication on a wireless medium, getting this message to the mobile radio on time may be problematic, resulting in a bad case in interruption of an ongoing call (page 2, lines 10-14).

In an analog, cellular network, communication between the radio and the base station may follow a standard format, such as the US system AMPS (Advanced Mobile Phone System) (page 1, lines 6-11). A 1032-bit wide-band data sequence for AMPS is shown in FIG. 1. The entire 1032 bits is devoted to conveying a single data word, and is re-transmitted repeatedly to give the receiver an opportunity to recognize the data word (page 1, lines 24-26). Due to noise arising from multiples sources, the arriving bit pattern may not be not easily recognizable (page 2, lines 27-30). Certain fields in the data sequence have a predetermined bit pattern to aid in recognition and synchronization with the arriving stream of bits (page 7, lines 9-11). The present invention is directed to reducing the chance that any particular transmission will fail to result in recognition, thereby reducing the possibility of a lapse in communication during a handoff (page 1, lines 20-23). The instant invention also tolerates longer outage times, i.e., time period during which transmission is interfered with (page 5, lines 15-17). The present invention especially enhances the communication of control signals consisting of a single data word (page 2, lines 31-33).

As seen from FIG. 1, the 1032-bit wide-band data sequence is formatted first with a 101-bit starting synchronization (DOT1). Next is a word synchronization (WS) followed by a first repetition (REP1) of the data word particular to this wide-band data sequence. The next field is a further synchronization (DOT). This field is likewise followed by a word synchronization (WS). Following is a second repetition (REP2) of the data word. Ten more sequences then follow of the DOT, WS, and the corresponding repetition.

Recognition of the data word is attained by examining all of the repetitions and coming to a conclusion (page 2, lines 7-9). However, no data word is examined until the data sequence conveying repetitions of the word is recognized (page 1, line 29 – page 2, line 5).

In conventional AMPS processing, the receiver is deemed to have successfully recognized a particular, incoming data sequence only if the receiver has recognized the starting synchronization (DOT1) (page 1, line 29 – page 2, line 2).

According to the present invention, by contrast, even if the starting synchronization (DOT1) is not recognized, the data sequence may still be deemed to be recognized if a further synchronization (DOT) has been recognized (page 4, lines 22-24).

VI. ISSUES

I. Whether claims 1, 4 and 5 are patentable under 35 U.S.C. 103(a) over U.S. Patent No. 5,768,268 to Kline et al. ("Kline") in view of U.S. Patent No. 6,331,976 to Sriram.

II. Whether claims 2 and 3 are patentable under 35 U.S.C. 103(a) over Kline in view of Sriram and U.S. Patent No. 4,905,234 to Childress et al. ("Childress").

III. Whether claim 6 is patentable under 35 U.S.C. 103(a) over Kline in view of Sriram.

VII. GROUPING OF CLAIMS

Claims 1, 4 and 5 stand or fall together. Claims 2 and 3 stand or fall together. Claim 6 stands or falls alone.

VIII. ARGUMENT

Rejection of claims 1, 4 and 5 under 35 U.S.C. 103(a)

As to claim 1, item 4 of the final Office Action (hereinafter the "Office Action") acknowledges that Kline fails to disclose or suggest the latter portion of claim 1, indicated below by the underlining:

> a network element . . . including receiving means for receiving a wide-band **data sequence** that is composed of a starting synchronization (DOT1), a word synchronization (WS), a data word (REP1) and a fixed number of repeats of a further synchronization (DOT), a word synchronization (WS) and the data word (REP2-REP11) . . . evaluation means for recognizing that a transmission of a **data sequence** takes place when a starting synchronization (DOT1) has been recognized or alternatively one of the further synchronizations (DOT), succeeded by a correct word synchronization (WS), has been recognized, and for evaluating data words (REP1-REP11) received each time subsequent to a recognized starting synchronization (DOT1) that is succeeded by a word synchronization (WS), or received subsequent to a recognized further synchronization (DOT) that is succeeded by a correct word synchronization (WS).

Kline fails to disclose or suggest detection of a wide-band sequence as a result of alternative recognition of merely a further synchronization.

Upon detecting a wide-band data sequence, Kline extracts all of the data words, and then waits until detection of the next data sequence to repeat the process (col. 11, lines 50-56).

Kline "DOT sequence" detection (col. 11, line 47; col. 12, line 27), however, to the extent that it can be compared to the present invention, entails recognition of the starting synchronization (DOT1) of the present invention.

To assume otherwise would lead to a contradiction.

To demonstrate, let it be assumed that the Kline "DOT sequence" detection (col. 11, line 47; col. 12, line 27) corresponds to recognition of the further synchronization (DOT) but not necessarily recognition of the starting synchronization (DOT1). Each Kline data word is accompanied by a count of the total number of repetitions of the data word in the wide-band data sequence. Following Kline "DOT sequence" detection, each repetition of the data word "is then buffered until the total indicated number of repetitions are received" (col. 12, lines 27, 42-46). However, recognition of a further synchronization (DOT) occurs arbitrarily at any one of the further synchronizations in the wide-band data sequence. Thus, for example, if the Kline count is five, but recognition occurs at repetition 3, only 3 repetitions can then be buffered.

It is clear, therefore, that Kline "DOT sequence" detection (col. 11, line 47; col. 12, line 27), to the extent it can be compared to the present invention, entails recognition of the starting synchronization (DOT1) of the present invention. The need to

recognize the starting synchronization (DOT1) is consistent with conventional processing. In conventional processing, the "network element should subsequently be synchronized in conformity with the 101-bit starting synchronization and the word synchronization before the various repeats of the actual data word can be received" (instant specification, page 1, line 29 – page 2, line 5).

Kline fails to disclose or suggest "evaluation means for recognizing that a transmission of a data sequence takes place when . . . alternatively one of the further synchronizations (DOT), succeeded by a correct word synchronization (WS), has been recognized" which language explicitly appears in claim 1 of the present invention.

The first full paragraph on page 6 of item 4 of the Office Action cites Sriram to compensate for the deficiencies in Kline. The Office Action cites Sriram FIG. 3 and various Sriram passages that describe a TDMA (col. 5, line 16) bitstream having a preamble that consists of a preamble prefix followed by a synchronization word. The preamble is used for synchronization (col. 5, line 20: "synchronize"). The preamble prefix is similar in configuration to an AMPS starting synchronization. The "synchronization word" following the preamble prefix serves to mark or delimit the end of the preamble (col. 5, lines 43-45). A receiver identifier follows the preamble, and user data follows the receiver identifier (FIG. 3).

It is unclear to the applicant how Sriram can fairly be characterized as making up for the shortcomings in Kline.

The "Response to Argument" section in item 1 of the Office Action firstly attempts to dismiss, as lacking patentable weight, the limitations of claim 1 of the present invention concerning recognition of "further synchronization." The rationale offered by

the Office Action is that this claim limitation purportedly is part to a claim recitation of intended use, rather than a claim limitation reciting structure. The applicant traverses this proposition.

Perhaps, the Advisory and Office Actions assume that the use of the word "for" in a claim implies that anything that follows is an intended use.

> Office personnel must always remember to use the perspective of one of ordinary skill in the art. Claims and disclosures are not to be evaluated in a vacuum. If elements of an invention are well known in the art, the applicant does not have to provide a disclosure that describes those elements. In such a case the elements will be construed as encompassing any and every art-recognized hardware or combination of hardware and software technique for implementing the defined req - uisite functionalities. MPEP 2106(II)(C)(page 8, right column, second full paragraph) [underlining added for emphasis].

It is the applicant's understanding regarding conventional technology within the same technical field as claim 1 of the present invention that prior art processing of the "wide-band data sequence" entails a means for receiving and a means for evaluating. In particular, the purpose for transmitting the sequence is to achieve synchronization by getting the receiver to correctly recognize what is being transmitted and such recognition involves evaluation. One example is conventional AMPS processing (present specification: page 1, lines 6-11; page 2, lines 10-13; Kline, col. 3, lines 31-40).

With regard to claim 1 of the present invention, the structure of the present "evaluation means" is explicitly recited, and is understood by one of ordinary skill in the art in the context of "the defined requisite functionalities" cited above in MPEP 2106(II)(C).

Claim 1 recites, "A network element . . . including receiving means . . . as well as evaluation means." The structure of the evaluation means is specified in claim 1 as "evaluation means for recognizing that a transmission of a data sequence takes place when a starting synchronization (DOT1) has been recognized or alternatively one of the further synchronizations (DOT), succeeded by a correct word synchronization (WS), has been recognized and for evaluating data words (REP1-REP11) received each time subsequent to a recognized starting synchronization (DOT1) that is succeeded by a word synchronization (WS), or received subsequent to a recognized further synchronization (DOT) that is succeeded by a correct word synchronization (WS)."

No such evaluation means with the structure recited in claim 1 of the present invention is disclosed or suggested in Kline, and nothing in the Sriram reference makes up for the shortcomings in Kline.

Firstly, the Advisory Action responds by repeating what was said in the Office Action, that "a recitation of intended use must result in a structural difference." As explained in response to both Actions, however, claim 1 does recite structural difference.

In the first full paragraph of page 3, the "Response to Argument" section, item 1 of the Office Action, secondly suggests that Sriram recognition of the "plurality of preamble prefix bits" (col. 2, line 36) "could potentially correspond to" the "further synchronizations" that the evaluation means of the present invention recognizes alternatively. In support of this proposition, the Office Action offers lines 3-24 of column 5 of Sriram. This passage merely describes the receiver's use of the preamble prefix, mentioned above, in establishing timing "so successive bits following the

preamble prefix are properly distinguished from one another" (col. 5, lines 23-24). It is unclear to the applicant how this passage relates to issue of patentability of claim 1 of the present invention. The Office Action offers no guidance as to how it would have been obvious to modify Kline, in view of Sriram, to meet the limitations of claim 1 of the present invention.

Notably, with regard to motivation, the Office Action states in the second full paragraph on page 6 that it would have been obvious "to have included into Kline's wideband data system, Sriram's detection methods, for purposes of surer detection (and thus synchronization) in order to properly demodulate a signal, as taught by Sriram."

Firstly, it is unclear how inclusion of Sriram's detection methods into Kline would produce an embodiment that meets the limitations of claim 1 of the present invention. In particular, it is unclear how Sriram can fairly be said to suggest modification of Kline to relieve the need to recognize the starting synchronization in favor of relying merely on recognition of further synchronizations.

Secondly, the idea of affording "surer detection" appears to come from lines 10-14 of page 2 of the present specification, rather than from the references. It is noted that no citation to any reference, or any other authority, is made for the purported motivation.

The second paragraph of item 3 of the Advisory Action appears to question the validity of the above statement that "recognizing a starting synchronization is conventionally a prerequisite for receiving the data words of that wide-band data sequence," but fails to cite any reason in support of such a position.

The same paragraph also suggests that "both systems teach (in broad terms) of the concept of detecting a synchronization and then recovery of data (for example: Kline column 11, lines 45-50 and Sriram: column 2, lines 38-40)" [underlining added for emphasis].

Firstly, however, the cited "concept of detecting synchronization and then recovery of data" amounts to convention processing.

Secondly, by mentioning "both systems" the Advisory Action is presumably trying to combine the two references, but it is unclear to the applicant how the references are being combined.

Thirdly, the passages cited have no apparent relevance to establishing the validity of any claim rejection.

The first passage (Kline, col. 11, lines 45-50), merely explains, as set forth above in this analysis, detection of the Kline "DOT sequence" and subsequent data extraction. The second passage likewise fails to support the proposition of the Advisory Action, since it merely mentions that data bits follow the Sriram preamble.

For at least all of the above reasons, the cited references, alone or in combination, fail to anticipate or render obvious the invention as recited in claim 1. Reconsideration and withdrawal of the rejection is respectfully requested.

Claims 4 and 5 each depend from claim 1 and are deemed to distinguish patentably over the cited references for at least the same reasons set forth above with regard to claim 1.

Rejection of claims 2 and 3 under 35 U.S.C. 103(a)

Claims 2 and 3 depend from claim 1. Childress deals with signaling formats but cannot compensate for the deficiencies in Kline and Sriram. Accordingly, for at least this reason, neither claim 2 nor claim 3 is rendered obvious by Kline/Sriram/Childress.

Rejection of claim 6 under 35 U.S.C. 103(a)

Claim 6 recites in step b) "determining whether a starting synchronization (DOT1) . . . or whether a further synchronization (DOT) can be recognized . . ." The above-quoted recitation implies a method that operates by making two separate determinations.

Kline, by contrast, requires that a starting synchronization be recognized and is therefore tied to the first of two determinations.

Moreover, the evaluating in claim 6 also implies a method that operates by making evaluations under two separate circumstances, whereas Kline, by contrast, is tied to the first of the circumstances. In particular, Kline, in evaluating data words, always starts "subsequent to a recognized starting synchronization (DOT1)."

For at least the above reasons, Kline fails to disclose or suggest an embodiment that meets the limitations of claim 6 of the present invention.

Sriram cannot make up for the deficiencies in Kline.

For at least the above reasons, the cited references fail to anticipate or render obvious the present invention as recited in claim 6.

IX. CONCLUSION

In view of the above analysis, it is respectfully submitted that the referenced teachings, whether taken individually or in combination, fail to anticipate or render obvious the subject matter of any of the present claims. Therefore, reversal of all outstanding grounds of rejection is respectfully solicited.

Respectfully submitted,

Aaron Waxler
Registration No. 48,027

Date: 09/20/04

By: Steve Cha
Attorney for Applicant
Registration No. 44,069

X. APPENDIX: THE CLAIMS ON APPEAL

1. A network element of an analog, cellular network, notably a mobile radio set or a base station, including receiving means for receiving a wide-band data sequence that is composed of a starting synchronization (DOT1), a word synchronization (WS), a data word (REP1) and a fixed number of repeats of a further synchronization (DOT), a word synchronization (WS) and the data word (REP2-REP11), as well as evaluation means for recognizing that a transmission of a data sequence takes place when a starting synchronization (DOT1) has been recognized or alternatively one of the further synchronizations (DOT), succeeded by a correct word synchronization (WS), has been recognized, and for evaluating data words (REP1-REP11) received each time subsequent to a recognized starting synchronization (DOT1) that is succeeded by a word synchronization (WS), or received subsequent to a recognized further synchronization (DOT) that is succeeded by a correct word synchronization (WS).

2. A network element as claimed in claim 1, characterized in that the evaluation means are arranged to use a received data sequence as a basis for the selection of a data word when the data sequence yields at least a predetermined number of correctly received repeats of the data word (REP1-REP11).

3. A network element as claimed in claim 1, characterized in that the evaluation means are arranged to select for further processing that repeat from the received repeats of a data word (REP1-REP11) in a data sequence that occurs most frequently.

4. A network element as claimed in claim 1, characterized in that the evaluation means include a memory for storing a correct starting synchronization (DOT1) and a data buffer which has a capacity at least equal to the starting synchronization for the bit-wise storage and shifting through of the received data, as well as comparison means for the continuous bit-wise comparison of the stored memory contents with the data buffer contents and for determining the number (dd(rx)) of deviating bits, the evaluation means being arranged to decide that a starting synchronization (DOT1) has commenced when the number (dd(rx))

of deviating bits is less than a predetermined number (dd_{min}), and that a starting synchronization (DOT1) has been correctly received when the number (dd(rx)) of deviating bits reaches zero.

5. A network element as claimed in claim 1, characterized in that the evaluation means are arranged to assume the occurrence of a change over to the second data sequence in the case of disturbed starting synchronizations (DOT1) of two directly successive data sequences after expiration of the temporal length of a data sequence as from the beginning of a first recognized synchronization (DOT) that is succeeded by a correct word synchronization (WS).

6. A method for a network element of an analog, cellular network, notably a mobile radio set or a base station, for receiving a data sequence, that is composed of a starting synchronization (DOT1), a word synchronization (WS), a data word (REP1) and a fixed number of repeats of a further synchronization (DOT), a word synchronization (WS) and the data word (REP2-REP11), which method includes the following steps: a) continuously monitoring the arrival of wide-band data streams, if any, in order to orecognize whether a data transmission intended for the network element takes place, b) determining whether a starting synchronization (DOT1) can be recognized in received data streams or whether a further synchronization (DOT) that is succeeded by a correct word synchronization (WS) can be recognized, and c) evaluating the data words (REP1-REP11) subsequent to a recognized starting synchronization (DOT1) or subsequent to a combination of a further recognized synchronization (DOT) and a correctly received word synchronization (WS).